

2019-02-14: Virtual Reality in Medical Education

The following links were shared during the chat:

- Future or Fad? Virtual Reality in Medical Education <https://news.aamc.org/medical-education/article/future-or-fad-virtual-reality-medical-education/>
- Using Virtual Reality in Medical Education to Teach Empathy <http://jmla.mlanet.org/ojs/jmla/article/view/518>
- Can Virtual Reality Really Be Used within the Lecture Theatre? <https://stel.bmj.com/content/early/2018/03/02/bmjstel-2017-000295.abstract>
- Research Progress of Artificial Psychology and Artificial Emotion in China <https://www.sciencedirect.com/science/article/pii/S2468232216300804>
- Breaking with Tradition: A Scoping Meta-Analysis Analyzing the Effects of Student-Centered Learning and Computer-Aided Instruction on Student Performance in Anatomy <https://onlinelibrary.wiley.com/doi/abs/10.1002/ase.1789>



MedEd Chat @MedEdChat7 hours ago

Welcome to the [#mededchat](#) (US) I am your moderator for the next hour [@alliance4clined](#) [#meded](#)



MedEd Chat @MedEdChat7 hours ago

The [#mededchat](#) topic & questions will be announced in a moment...for now, please introduce yourselves [#meded](#)



Gary Beck Dallaghan @GLBDallaghan7 hours ago

[@MedEdChat](#) Gary here in North Carolina. Looking forward to learning from this [#mededchat](#)



MedEd Chat @MedEdChat7 hours ago

If you are tuning in to the [#mededchat](#), remember to use the [#mededchat](#) hashtag and try to answer with the Topic numbers (T1, T2, T3)



Dr Samer Al-Bothaigi @SalemSamer7 hours ago

Hi all I am Samer surgical resident from Taiz faculty of medicine ,Yemen Glad to join the chat today [#mededchat](#)



MedEd Chat @MedEdChat7 hours ago

We will assume that all of your tweets during [#mededchat](#) are your own during this hour unless otherwise stated [#meded](#)



MedEd Chat @MedEdChat7 hours ago

[@SalemSamer](#) Welcome to the [#mededchat](#)!



MedEd Chat @MedEdChat7 hours ago

T1 about to come up in a few moments [#meded](#) [#mededchat](#)



A.J. Kleinhexel [@AJKleinhex7 hours ago](#)

I'm so deeply disappointed that I can't join in on the sim fun in [#mededchat](#) tonight! Coming from a background in virtual patient dev I was really looking forward to it. Unfortunately, I'm feeling under the weather.



MedEd Chat [@MedEdChat7 hours ago](#)

Topic 1: How can simulation with virtual reality enhance [#meded](#)? [#mededchat](#)



Rachel Salas MD [@RachelSalasMD7 hours ago](#)

[@MedEdChat](#) [@HopkinsMedicine](#) [@AANMember](#) [#meded](#) [#mededchat](#)



Gary Beck Dallaghan [@GLBDallaghan7 hours ago](#)

[@MedEdChat](#) T1 From what little I know about it I've read that the VR simulations allow for more life like scenarios where you can make mistakes without doing harm [#mededchat](#)



Rachel Salas MD [@RachelSalasMD7 hours ago](#)

[@MedEdChat](#) I would love to include this for a more real feel for learners [#mededchat](#)



Dr. Sateesh Arja [@ArjaSateesh7 hours ago](#)

[@MedEdChat](#) [#Mededchat](#) T1 Virtual reality simulation is very useful to develop clinical knowledge and clinical reasoning and managing the patient in a time frame. Not only we can foster these, we can also assess clinical reasoning of trainees using virtual reality simulation. [#meded](#)



Gary Beck Dallaghan [@GLBDallaghan7 hours ago](#)

[@ArjaSateesh](#) [@MedEdChat](#) T1 How is this different from hiring standardized patients to act out scenarios? They can be more spontaneous than a program so wouldn't that be more realistic? [#mededchat](#)



Rachel Salas MD [@RachelSalasMD7 hours ago](#)

[@GLBDallaghan](#) [@ArjaSateesh](#) [@MedEdChat](#) Can accommodate more diversity in the patients. [#mededchat](#)



Dr. Sateesh Arja [@ArjaSateesh7 hours ago](#)

[@SalemSamer](#) [@MedEdChat](#) T1 not only patient safety, but also less availability of patients to teach and reduced number of training hours, Virtual reality plays important role in training residents. It is also very good tool for debriefing and providing feedback [#mededchat](#)



MedEdBot [@MedEdBot7 hours ago](#)

RT [@MedEdChat](#): We will assume that all of your tweets during [#mededchat](#) are your own during this hour unless otherwise stated [#meded](#)



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

simulation give u a typical scenario for a skill ,however the weather is not always sunny ,sometimes it. Is rainy and stormy ! So there should be levels with from easy to difficult simulation session [#mededchat](#)



MedEdBot @MedEdBot7 hours ago

RT @MedEdChat: T1 about to come up in a few moments [#meded](#) [#mededchat](#)



MedEdBot @MedEdBot7 hours ago

RT @MedEdChat: Topic 1: How can simulation with virtual reality enhance [#meded](#)? [#mededchat](#)



Rachel Salas MD @RachelSalasMD7 hours ago

RT @MedEdChat: Topic 1: How can simulation with virtual reality enhance [#meded](#)? [#mededchat](#)



Blake Cirks, MD @BlakeCirks7 hours ago

RT @Alliance4ClinEd: T3 Here are some resources for teaching as well as ideas for assessment <https://t.co/OR7BxpAVAH> <https://t.co/cCMgZdzN...>



MedEd Chat @MedEdChat7 hours ago

[@ArjaSateesh](#) [@SalemSamer](#) T1 How so with debriefing and feedback? Can you explain how that works with VR? [#mededchat](#)



Dr Samer Al-Bothaigi @SalemSamer7 hours ago

T1 simulation is a great solution for surgeon selfishness and bullying [#mededchat](#)



Dr Samer Al-Bothaigi @SalemSamer7 hours ago

RT [@ArjaSateesh](#): [@SalemSamer](#) [@MedEdChat](#) T1 not only patient safety, but also less availability of patients to teach and reduced number of t...



Terry Kind, MD MPH @Kind4Kids7 hours ago

[@AJKleinhex](#) Sorry to hear that. Tweet [#MedEdChat](#) when you feel better soon!



Dr Samer Al-Bothaigi @SalemSamer7 hours ago

Simulation should be the first step for skills learning [#mededchat](#)



Alliance4ClinEd @Alliance4ClinEd7 hours ago

T1 This was an interesting take on VR in [#meded](#) <https://t.co/SjaMAyRvFe> [#mededchat](#)



MedEd Chat @MedEdChat7 hours ago

RT [@Alliance4ClinEd](#): T1 This was an interesting take on VR in [#meded](#) <https://t.co/SjaMAyRvFe> [#mededchat](#)



MedEd Chat @MedEdChat7 hours ago

Topic 2: Many think VR is superior to using standardized patients. What are your thoughts? [#mededchat](#) [#meded](#)



Jennifer K. Chen, MD FAAP [@DrJenChen4kids7 hours ago](#)

[@MedEdChat](#) [#mededchat](#) T1: Preclinical teaching anatomy, clinical to model stressful situations or procedures with low risk of anyone getting hurt! Tagging [@Drtoddchang](#) to chime in because this is part of his research!



Dr. Sateesh Arja [@ArjaSateesh7 hours ago](#)

[@MedEdChat](#) [@SalemSamer](#) T1 based on students' performance and students' performance is recorded, faculty members can give feedback and there is no time constraint [#mededchat](#)



@AMTUTMB [@amtutmb7 hours ago](#)

RT [@MedEdChat](#): Topic 1: How can simulation with virtual reality enhance [#meded?](#) [#mededchat](#)



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

[#mededchat](#) Simulation need alot of fund and money I think patient safety deserve this money spending



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

RT [@ArjaSateesh](#): [@MedEdChat](#) [@SalemSamer](#) T1 based on students' performance and students' performance is recorded, faculty members can give f...



Geewhiz [@Geewhiz342899237 hours ago](#)

RT [@MedEdChat](#): Topic 1: How can simulation with virtual reality enhance [#meded?](#) [#mededchat](#)



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

RT [@SalemSamer](#): [#mededchat](#) Simulation need alot of fund and money I think patient safety deserve this money spending <https://t.co/YgrCN4...>



Dr. Kirsten Brown [@DrKirtyBrown7 hours ago](#)

As an [#anatomy](#) professor I'm disappointed I can't discuss the [#mededchat](#) tonight. Alas I'm currently getting dirty looks form SO on this [#ValentinesDay](#)



Gary Beck Dallaghan [@GLBDallaghan7 hours ago](#)

T2 From an educational perspective, wouldn't it be wise to consider when and how to use VR vs standardized patients? [#mededchat](#)



Jason Jarzembowski [@smallbluecells7 hours ago](#)

RT [@mcwreads](#): Sorry for the late entry of our 4th [#MCWCommonRead](#) prompt. How does this passage feel to our [#MedEd](#) [#mededchat](#)[#medstudents](#) a...



Terry Kind, MD MPH [@Kind4Kids7 hours ago](#)

[@DrKirtyBrown](#) Virtual Valentine's Day [#MedEdChat](#)



Dr. Sateesh Arja [@ArjaSateesh7 hours ago](#)

[@MedEdChat](#) [#mededchat](#) T2 VR might be superior to standardized patients. But communication and interpersonal skills and professionalism can't be taught or assessed by VR. For these competencies

Standardized patients are better. [#meded](#)



Gary Beck Dallaghan [@GLBDallaghan7 hours ago](#)

T2 Admittedly I am a dinosaur about tech, this article suggests VR can help teach empathy. This is a skill that would seem better suited for an actual person to interact with.

Thoughts? <https://t.co/fT7cCgbG6W> [#mededchat](#)



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

Simulation and [#VR](#) is a great tool to assess trainee skills gain and to assess trainee preparedness be4 being a real performer [#mededchat](#)



MedEd Chat [@MedEdChat7 hours ago](#)

RT [@ArjaSateesh](#): [@MedEdChat](#) [#mededchat](#) T2 VR might be superior to standardized patients. But communication and interpersonal skills and pro...



MedEd Chat [@MedEdChat7 hours ago](#)

RT [@GLBDallaghan](#): T2 Admittedly I am a dinosaur about tech, this article suggests VR can help teach empathy. This is a skill that would se...



Jennifer K. Chen, MD FAAP [@DrJenChen4kids7 hours ago](#)

[@MedEdChat](#) [#mededchat](#) T2: I'd disagree: you still can't get the same feeling for human interaction (eg breaking bad news) or tactile physical exam in VR (realistic mannequins are somewhere in between)



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

RT [@DrJenChen4kids](#): [@MedEdChat](#) [#mededchat](#) T2: I'd disagree: you still can't get the same feeling for human interaction (eg breaking bad new...



Gary Beck Dallaghan [@GLBDallaghan7 hours ago](#)

T2 This article raises other limitations to consider for VR....however, I wonder if in time and advances this won't be as much of a concern <https://t.co/RcuZqCAwA5> [#mededchat](#)



MedEd Chat [@MedEdChat7 hours ago](#)

RT [@DrJenChen4kids](#): [@MedEdChat](#) [#mededchat](#) T2: I'd disagree: you still can't get the same feeling for human interaction (eg breaking bad new...



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

RT [@GLBDallaghan](#): T2 This article raises other limitations to consider for VR....however, I wonder if in time and advances this won't be as...



Dr. Kirsten Brown [@DrKirtyBrown7 hours ago](#)

Ugh breaking my rule bc love this topic! Data is mixed 4 performance. 4 [#anatomy](#). But involve stakeholders in any discussion for implementation. [#mededchat](#)



AJHaas [@ImAJHaas7 hours ago](#)

RT [@MedEdChat](#): Topic 2: Many think VR is superior to using standardized patients. What are your thoughts? [#mededchat](#) [#meded](#)



MedEd Chat [@MedEdChat7 hours ago](#)

Topic 3: How do we balance education so we aren't training simulated doctors? [#mededchat](#) [#meded](#)



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

<https://t.co/bJCcF11IGL> In the future [#VR](#) [#AI](#) and simulation will also include artificial EMOTIONS [#mededchat](#)



MedEd Chat [@MedEdChat7 hours ago](#)

RT [@SalemSamer](#): <https://t.co/bJCcF11IGL> In the future [#VR](#) [#AI](#) and simulation will also include artificial EMOTIONS [#mededchat](#)



AJHaas [@ImAJHaas7 hours ago](#)

[@MedEdChat](#) [#MedEdChat](#) T2 this question comes down to asking, who can pass the Turing test: VR or an SP? We're getting closer. But VR isn't there yet. The fidelity gap is still palpable enough to influence behavior.



Dr. Kirsten Brown [@DrKirtyBrown7 hours ago](#)

Still going here... it's imp to know outcomes in interventions. In [#Anatomy](#) performance is the same 4 CAI vs non. What is your goal? Is it helpful for learning or the latest fad? [#mededchat](#) <https://t.co/LvUUSvgv6>



MedEd Chat [@MedEdChat7 hours ago](#)

T3 This question came to mind from an op ed that essentially suggested if we only use simulation to educate then we may end up with simulated doctors. [#mededchat](#)



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

RT [@SalemSamer](#): <https://t.co/bJCcF11IGL> In the future [#VR](#) [#AI](#) and simulation will also include artificial EMOTIONS [#mededchat](#)



MedEd Chat [@MedEdChat7 hours ago](#)

RT [@DrKirtyBrown](#): Still going here... it's imp to know outcomes in interventions. In [#Anatomy](#) performance is the same 4 CAI vs non. What i...



Dr. Meadow Maze Good [@MeadowGood7 hours ago](#)

[@MedEdChat](#) T3: This is hard. Surgery number at elower each year. Inevitably longer residencies or more defined paths so some get more of one thing than the other will have to happen. Simulation is only so good to prepare for real thing. [#MedEdChat](#) [#meded](#)



Abhay Dandekar [@abhaydandekar7 hours ago](#)

A3: authentic experiences provide foundation and substrate for entrustment while VR provides critical opportunities to safely practice- mentors and supervisors must balance and model these effectively for learners [#MedEd](#) [#mededchat](#) [@MedEdChat](#)



MedEd Chat [@MedEdChat7 hours ago](#)

RT [@abhaydandekar](#): A3: authentic experiences provide foundation and substrate for entrustment while VR provides critical opportunities to s...



Dr. Meadow Maze Good [@MeadowGood7 hours ago](#)

T3: This is hard. Surgery numbers are each year. Inevitably longer residencies or more defined paths so some get more of one thing than the other will have to happen. Simulation is only so good to prepare for real thing. [#MedEdChat](#) [#meded](#)



Alliance4ClinEd [@Alliance4ClinEd7 hours ago](#)

RT [@abhaydandekar](#): A3: authentic experiences provide foundation and substrate for entrustment while VR provides critical opportunities to s...



Alliance4ClinEd [@Alliance4ClinEd7 hours ago](#)

RT [@SalemSamer](#): <https://t.co/bJCcF11IGL> In the future [#VR](#) [#AI](#) and simulation will also include artificial EMOTIONS [#mededchat](#)



ADMSEP [@admsep7 hours ago](#)

RT [@SalemSamer](#): <https://t.co/bJCcF11IGL> In the future [#VR](#) [#AI](#) and simulation will also include artificial EMOTIONS [#mededchat](#)



Dr. Meadow Maze Good [@MeadowGood7 hours ago](#)

T3: I am a robotic surgeon with very little simulation training. The basics were great with sim but then only real life can prepare you for the difficult cases. I am thankful for my tough training. [#MedEdChat](#) [#meded](#)



Dr Samer Al-Bothaigi [@SalemSamer7 hours ago](#)

<https://t.co/WCPZ8pSEdE> The ability to acquire surgical skills requires consistent practice, and evidence suggests that many of these technical skills can be learnt away from the operating theatre. [#mededchat](#)



MedEd Chat [@MedEdChat7 hours ago](#)

RT [@MeadowGood](#): T3: I am a robotic surgeon with very little simulation training. The basics were great with sim but then only real life can...



AJHaas [@ImAJHaas7 hours ago](#)

[@MedEdChat](#) [#MedEdChat](#) T3 perhaps the question isn't an exclusively binary choice between simulation or real experience. But how can simulation blend into everyday practice to learn, maintain, and troubleshoot new scenarios? Even pro golfers take a practice swing. [@DrWeinstock@SIMPeds](#) [BCH](#)



Jennifer K. Chen, MD FAAP [@DrJenChen4kids6 hours ago](#)

[@MedEdChat](#) [#mededchat](#) T3: I don't think anyone's saying VR/sim is going to replace the hours of real patient interaction we get during residency, more that it could be a supplement, eg doing a procedure in VR a few times before attempting the real thing (still w appropriate supervision)



MedEd Chat [@MedEdChat6 hours ago](#)

RT [@DrJenChen4kids](#): [@MedEdChat](#) [#mededchat](#) T3: I don't think anyone's saying VR/sim is going to replace the hours of real patient interactio...



MedEd Chat [@MedEdChat6 hours ago](#)

RT [@ImAJHaas](#): [@MedEdChat](#) [#MedEdChat](#) T3 perhaps the question isn't an exclusively binary choice between simulation or real experience. But h...



Dr Samer Al-Bothaigi [@SalemSamer6 hours ago](#)

Simulation and [#VR](#) are complementary and supportive for [#medEd](#) & [#surgEd](#) But not a substitutes for real life clinical & operation room learningc[#mededchat](#)



Alliance4ClinEd [@Alliance4ClinEd6 hours ago](#)

RT [@ImAJHaas](#): [@MedEdChat](#) [#MedEdChat](#) T3 perhaps the question isn't an exclusively binary choice between simulation or real experience. But h...



Dr Samer Al-Bothaigi [@SalemSamer6 hours ago](#)

RT [@DrJenChen4kids](#): [@MedEdChat](#) [#mededchat](#) T3: I don't think anyone's saying VR/sim is going to replace the hours of real patient interactio...



MedEd Chat [@MedEdChat6 hours ago](#)

We have about 5 more minutes left in our discussion. Please feel free to give some final thoughts [#meded](#) [#mededchat](#)



Abhay Dandekar [@abhaydandekar6 hours ago](#)

[@MeadowGood](#) This is the challenge - integrating error and improvement based learning in a high stakes environment where outcomes and safety are a must. This is where patient/learner/supervisor must be synchronised [@acgme](#) [#MedEdChat](#) [#MedEd](#) [@laxswamy](#)



Dr Samer Al-Bothaigi [@SalemSamer6 hours ago](#)

RT [@SalemSamer](#): Simulation and [#VR](#) are complementary and supportive for [#medEd](#) & [#surgEd](#) But not a substitutes for real life clinical & oper...



MedEd Chat [@MedEdChat6 hours ago](#)

RT [@abhaydandekar](#): [@MeadowGood](#) This is the challenge - integrating error and improvement based learning in a high stakes environment where...



Dr Samer Al-Bothaigi [@SalemSamer6 hours ago](#)

RT [@admsep](#): T3 This review article provides best evidence to teach [#medstudents](#) reflection....which is where the process needs to start htt...



Dr. Meadow Maze Good [@MeadowGood6 hours ago](#)

RT [@abhaydandekar](#): [@MeadowGood](#) This is the challenge - integrating error and improvement based learning in a high stakes environment where...



Abhay Dandekar [@abhaydandekar6 hours ago](#)

[@MedEdChat](#) Just like any tech, we must be thoughtful about how it interfaces with need for human connectivity as learners and leaders - therefore hopefully can be a tool for more relationship building rather than promote isolation [@MedEdChat](#) [@acgme](#) [@AAMCtoday](#) [#MedEd](#) [#MedEdChat](#)



MedEd Chat [@MedEdChat6 hours ago](#)

Join us again next week at 9 pm Thursday. Don't forget to suggest topics by DM or email [#meded](#) [#mededchat](#)



MedEd Chat [@MedEdChat6 hours ago](#)

That's a wrap...I will post the [#mededchat](#) transcript tomorrow morning on <https://t.co/mJivoKroXx> on the Resources page. Thanks everyone for participating! [#meded](#)



mindfulness.describe @mindfulnessdes16 hours ago
[#meditate](#) [#consciousness](#) [#hcsmsA](#) [#therapy](#) [#MedEdChat](#) [#attitude](#) <https://t.co/zgF46Mbz9T>



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mindfulness.describe @mindfulnessdes16 hours ago
[#guidedmeditation](#) [#grateful](#) [#lifequotes](#) [#MedEdChat](#) [#happy](#) [#mechanism](#) <https://t.co/zgF46Mbz9T>



Dr. Meadow Maze Good @MeadowGood6 hours ago
RT @DrJenChen4kids: [@MedEdChat](#) [#mededchat](#) T2: I'd disagree: you still can't get the same feeling for human interaction (eg breaking bad new...



Natalie Langley @nrlangley6 hours ago
RT @ImAJHaas: [@MedEdChat](#) [#MedEdChat](#) T3 perhaps the question isn't an exclusively binary choice between simulation or real experience. But h...



MedEdBot @MedEdBot6 hours ago
RT @MedEdChat: That's a wrap...I will post the [#mededchat](#) transcript tomorrow morning on <https://t.co/mJivoKroXx> on the Resources page. Tha...



AL-BLOWI, WAEL F. M. @ABU_TALEEN826 hours ago
RT @abhaydandekar: A3: authentic experiences provide foundation and substrate for entrustment while VR provides critical opportunities to s...



Lakshman Swamy @laxswamy5 hours ago
RT @abhaydandekar: @MeadowGood This is the challenge - integrating error and improvement based learning in a high stakes environment where...



Bernadette Keefe MD @nxtstop12 hours ago
Last evening's [#mededchat](#). [#medsim](#) [#sim](#) [#VR](#) [#meded](#) <https://t.co/IUC8CORGSw>



MedEdBot @MedEdBotan hour ago
RT @nxtstop1: Last evening's [#mededchat](#). [#medsim](#) [#sim](#) [#VR](#) [#meded](#) <https://t.co/IUC8CORGSw>